

Recreation, Tourism and Cultural Resources

Perceptions of GSL vary among local residents. Some find that the lake offers great beauty, quality recreation and significantly enhances the quality of their lives. Others view the lake negatively and find little value in GSL. Out-of-state tourists often view GSL as one of the most well-known of Utah's natural resources, and aspire to visit the lake while visiting northern Utah. The tourism industry and local residents alike desire greater access to GSL provided in a manner that does not impair lake resources (DPR, 1994).

The demand for recreational uses of GSL's resources is expected to grow in the future. The lake's extraordinary numbers of birds, magnificent sunsets and vistas, no-sink swimming, trails, wildlife, cultural and range resources, development of Antelope Island and open space next to a growing metropolitan area all indicate growing interest in visiting and recreating at GSL.

Based on internal and external scoping, the planning team identified a number of interests and concerns with regard to management of GSL's recreation resources, including:

- **Capacities and uses of existing recreational sites, marinas and other facilities are issues.**
- **Management of AISP needs to be considered.**
- **Recreational boat navigation through existing causeways is a concern.**

- **Camping, hiking, biking, trails, automobile touring and picnicking opportunities and access are issues to be considered.**
- **Hunting, birdwatching and wildlife management area access and opportunities need to be considered.**
- **Hunting and AISP user conflicts are issues to be addressed.**
- **Resource education and interpretation opportunities are issues to consider.**
- **Cultural resource protection needs to be addressed.**
- **Recreational off-highway vehicle (OHV) use on sovereign lands is an area of concern.**
- **A centralized south shore visitors/activities area needs to be considered.**

Although a large number of specific recreation-related concerns and issues were raised, the general themes related to the numbers and types of recreational opportunities available on GSL, user conflicts, the environmental impacts of recreational uses and educational and interpretive opportunities. Rather than devote discrete sections to discussion of each issue, this section provides a description of the kinds, locations and uses of recreational facilities and opportunities on GSL, existing interpretive and educational

opportunities and programs and cultural resource protection and interpretation.

Recreation Sites and Opportunities on and around Great Salt Lake

Antelope Island (DPR)

The largest island in GSL is Utah's largest state park. Reopened in July 1993, Antelope Island's annual visitation (currently at 350,000) has grown steadily, and the island has been identified by the Utah Travel Council as one of Utah's fastest growing tourist attractions. DFFSL has signed an MOU with DPR to allow AISP to manage sovereign lands surrounding the island as a buffer zone.

Antelope Island has been called the best place to see and experience GSL, given the island's sandy beaches, lofty overlooks and amenities. Antelope Island has a unique array of wildlife—abundant large mammals adjacent to concentrations of water birds of hemispheric importance. Ungulate species on Antelope Island include the third largest publicly owned bison herd in the nation, pronghorn, big horn sheep and mule deer. The island's east shore is dominated by freshwater seeps and wetlands and is connected to the mainland marshes by playas off the south end of the island. This array of wildlife, accompanied by limited access provides outstanding wildlife viewing opportunities.

Antelope Island has important cultural sites, most significant of which is the Fielding Garr Ranch. The Fielding Garr

Ranch contains some of the oldest anglo-constructed buildings in Utah and was the home ranch for some of Utah's largest ranching operations from 1848-1981. The site's interpretive focus is on the length of occupation and the evolution of large-scale western ranching from pre-mechanization to mechanization. Recreational opportunities and development include, scenic drives with bicycle lanes, a back country trail system, campgrounds and picnic areas, interpretive information and programs, a swimming beach and a marina. A private concession business, food and souvenirs, a small tour boat and guided horseback rides are located on the island.

Significant educational opportunities are available on Antelope Island. DPR, in partnership with Davis County, developed a 5,200 sq. ft. visitor center overlooking the lake. Interpretive exhibits and programs focus on GSL including Antelope Island and the other surrounding resources. The Fielding Garr Ranch is open daily and is another important historical interpretive venue. Opportunities for self-directed interpretation are available with nature trails, wayside exhibits and publications. An outdoor amphitheater, located at the visitor center enhances the park's ability to provide personal programs. The park provides educational talks to thousands of school children per year and the proximity to universities and significance of resources allows for a number of outside research projects.

Challenging issues confront AISP. Foremost is to provide greater access while still protecting the park's resources. Park staff have identified critical habitat which is inappropriate for access and development. Managing the

back country non-motorized trail system is a particular challenge and management has instituted a program of area and time of use limitations. The park has an independent, outside Wildlife Committee to advise management on resource-based issues. The park is initiating social carrying capacity and wildlife protection studies in an attempt to quantify and safeguard the quality of visitor experience. Other significant issues facing the park include the potential development of a southern road access to the island, separation of waterfowl hunters from traditional park visitors, overflights from aircraft and increasing visitation and use.

Great Salt Lake Marina (DPR)

The GSL Marina is the most popular launching and mooring site on the lake. The marina is a highly developed, attractive and safe mooring site for approximately 300 sailboats. Given the marina's proximity to Salt Lake City and level of development it is generally filled to capacity. The marina also provides access to the lake for boaters who do not moor their vessels at the site. Two tour boats operate occasionally on the lake—one based at Antelope Island and the other at the GSL Marina. The park staff offers educational talks by reservation. Visitation to GSL Marina in 1999 is estimated at 136,496.

Willard Bay State Park (DPR)

Willard Bay Reservoir is a U.S. Bureau of Reclamation project which provides water for irrigation, M&I use, flood control, recreation, fish and wildlife purposes. The dike that separates Willard

Bay from GSL is 36 feet high and 14.5 miles long. When the reservoir is full, it exceeds the elevation of GSL. When reservoir water levels are low, GSL's old shoreline is exposed on the south and southeast side of the reservoir. DPR manages the recreation resources and facilities, and DWR manages the fish and wildlife.

Visitation to Willard Bay State Park in 1997 was 461,000. This level of use is causing some user conflicts and degradation of the park facilities. The first phase of a Bureau of Reclamation-sponsored Resource Management Plan (RMP) has been completed. Major renovation of facilities will begin in the spring of 2000. The RMP effort will identify management goals and objectives for the reservoir. Some important issues which have emerged include improving coordination with other entities, resolving user conflicts and expanding educational and interpretive opportunities. Water quality, management of concession services, visitor needs for additional recreational facilities to reduce congestion, improved safety and resource protection are other issues to be addressed in the RMP.

Saltair/South Shore (DFFSL)

This recreational complex consists of south shore beach areas and the Saltair Resort. It offers access to the lake and has an attractive visual impact, with its open expanse, islands and beautiful sunsets. Birding opportunities are also significant. Saltair Resort provides interpretive information, food, souvenirs, an historic site and special events ranging from concerts to beach festivals. This site provides the quickest and easiest access to the lake from downtown Salt Lake

City. The entire south shore beach area and the marina were managed by DPR as GSL State Park. Management of the South Shore Beach Area was returned to DFFSL in 1997. At that time, over 600,000 people visited GSL State Park.

There are a number of challenges inherent to the site including fluctuating water levels, odors and proximity to the Kennecott Copper Smelter.

Rozel Point (DFFSL)

The Spiral Jetty is a famous international work of art. It is an “earthwork sculpture” on sovereign land off Rozel Point in the north arm of GSL. The jetty was constructed in 1970 by Robert Smithson. In the years following its creation it received a wealth of publicity in the national press, photographs in every major art periodical, in surveys of 20th century art and magazines of more general circulation. The Spiral Jetty is among the classics of modern sculpture and has been viewed by many international visitors (Appendix B, SULA 889).

Rozel Point is also one of the few access points to the north arm of the lake. Access is through the Golden Spike National Historic Site and visitors can obtain a map at the visitor center. There are no facilities at Rozel Point and the site has suffered from unauthorized dumping and construction which detracts from the beauty of the location. DFFSL is working to clean up the site.

Farmington Bay Waterfowl Management Area (DWR)

This 17,916-acre management area is one of the most popular waterfowl hunting areas in Utah and also is an outstanding birding area. Farmington Bay WMA is unique in that it provides important wetland habitat and wildlife-based recreation close to an urban area. The management area is also one of the best places to observe the freshwater interface with GSL. DWR manages their WMAs to provide habitat for water-dependent birds.

Currently the Farmington Bay WMA receives 48,644 visitors annually. Of this, 20,644 are waterfowl hunters and the rest are birding or other recreationists. Staff has identified March 1 through August 1 as a critical wildlife production period. During the critical production period, a 1.5-mile road is opened, with an overlook and interpretive signing and an additional 2.5 miles is opened for non-motorized use. During the non-critical production period another 26 miles of dikes are opened to non-motorized use. An air boat ramp is opened from two weeks prior to hunting season through the hunting season. DWR is pursuing funding for enhanced visitor use development, possibly including a visitor center on the north end of the management area to enhance lake-wide interpretive and education efforts.

A number of critical issues confront the Farmington Bay WMA. These include potential impacts from the proposed Legacy Parkway, maintaining adequate water supply and water quality from the Jordan River, flooding from GSL and

urban development on the boundary of the management area.

Ogden Bay Waterfowl Management Area (DWR)

Ogden Bay WMA is over 21,000 acres and is the largest WMA in the state. Besides being a tremendous waterfowl production and habitat area, it also contributes significantly to recreation around GSL. The area hosts 70,000 visitor days per year, with 28,000 of those days representing hunters during the fall waterfowl season. A portion of the area is open year round for hosted organized group tours, appointments must be made with the Area Superintendent. From April 1 until September 1, the area is closed to general public use to protect wildlife habitat values. During the balance of the year, some portions of the area are open for wildlife viewing and hunting is allowed during prescribed seasons. There are approximately 45 miles of dikes that control water, one air boat launch that allows access to the Ogden Bay portion of GSL and several small boat ramps that allow access to interior ponds of the management area.

Water control is a critical issue at Ogden Bay WMA. The area is vulnerable to flooding, both from the Weber River and GSL. Ogden Bay is one of the oldest WMAs in Utah and has senior water rights.

Howard Slough Waterfowl Management Area (DWR)

Howard Slough WMA is located along the GSL shoreline between the south

boundary of Ogden Bay WMA and the Davis County Causeway. The area was created in 1958 to utilize irrigation water return flow to create an impounded marsh and wetlands of more than 3,500 acres. This relatively small area hosts up to 11 percent of all waterfowl hunter days in Utah. There are approximately 11,000 visitor days annually, which includes both wildlife watchers and hunters. Exact figures are difficult to establish because the manager of this area resides at Ogden Bay. The area is closed for general public use from April 1 until September 1 to protect wildlife habitat values. Different portions of the area are open during the balance of the year for wildlife watching and hunting during the prescribed seasons. There are approximately 7.5 miles of dikes and roadways that provide pathways for access. There are several small boat ramps that provide access to interior ponds.

Most of the ponds have dikes that front the GSL shoreline. At current lake elevations of 4203.5, these dikes are being destroyed by wave action and over-topped by salt water from the lake. This saline intrusion kills the aquatic vegetation within the interior ponds sometimes resulting in diminished wildlife habitat values.

Locomotive Springs Waterfowl Management Area (DWR)

Locomotive Springs WMA is an isolated wetland at the north end of GSL. This 17,317 acre WMA is an oasis for wildlife in the middle of the west desert. Currently, the staff is able to flood approximately 1,200 acres and the rest of the area is comprised of playas and

upland habitat. Locomotive Springs provides year round fishing and primitive camping. Public access is limited to three miles of roads. During hunting season the entire WMA is accessible. Locomotive Springs receives approximately 6,000 visitors a year, of which 5,000 are hunters and fisherman. Future plans include expanding the WMA by 2,600 acres to include protection of playas which are Snowy plover habitat. The critical issue at Locomotive Springs WMA is the diminishing flows from the springs.

Timpie Springs Waterfowl Management Area (DWR)

Timpie Springs WMA is a 1,440 wetland located near the southwest corner of the lake. Timpie Springs WMA contains two water impoundments, 3.5 miles of dikes, a half-mile road, parking lot and some information signs. Timpie Springs has around 400 annual visitors of which approximately 300 are waterfowl hunters. Critical issues at Timpie Springs WMA include adjacent land use, water allocation and management.

Stansbury Island (BLM/Private)

Only a small area on the south end of Stansbury Island is opened to the public and readily accessible. Development consists of an access road and a nine-mile trail on the west side that is open for non-motorized use. Stansbury Island is comprised of some of the most striking rock formations surrounding GSL. The island's vistas of the lake, mountain ranges and islands are dramatic. Currently the south end of Stansbury Island is utilized for dispersed recreation

including the non-motorized trail, camping, some OHV use and chukar hunting.

There has been a great deal of local interest in securing greater public access to Stansbury Island, for both motorized and non-motorized recreation. Given the island's size, location and resources, greater public access would significantly expand recreational opportunities surrounding GSL. The legality of the west side road closure is uncertain. BLM is willing to work with private landowners to secure better public access to the northern portion of the island and then coordinate management with the state if the northern portion is made accessible. The greatest challenge will be to secure greater public access from private land owners and then appropriately manage that visitation if made accessible.

Monument Point (BLM/DFPSL)

The 700 acres which make up Monument Point and the immediate section to the north are lands owned and managed by SITLA and private landowners. These lands have been used in trespass by OHV users. The Monument Point area offers pedestrian access to Spring Bay and the north arm of the lake, a stunning vista of one of the lake's most remote reaches, and nearby historical sites. BLM manages the old Central Pacific Railroad Grade as a Back Country Byway, complete with kiosk and interpretive signs at each siding, or what once were siding locations. BLM encourages driving or riding on the grade only, and discourages motorized use on surrounding, unroaded, BLM lands. BLM marshlands or wetlands at Salt Wells Flats, and between Locomotive

Springs and the Crocodile Mountains, have been posted closed to all vehicles. The Salt Wells Flats has been identified as an Area of Critical Environmental Concern (ACEC) to protect this unique wetlands resource. The key challenge at, or surrounding the Monument Point area, is managing a growing, illegal use of motorized vehicles on state, private, and BLM lands. “No Motorized Vehicle” signs have been posted on BLM lands, but they are torn down or vandalized within weeks, resulting in abuse of the resources. BLM may be interested in securing a land exchange in the Salt Wells area to complement the ACEC.

Davis County Causeway (Davis County)

In return for maintaining the causeway from Syracuse to Antelope Island, the State of Utah deeded the roadway to Davis County. Davis County now manages this causeway in cooperation with DPR. The Davis County Causeway is one of the most scenic drives around GSL, and is an outstanding birding area. The bike lanes provide one of the most popular cycling tours in northern Utah. Davis County has developed a trail head parking lot for cyclists and other areas with interpretive information on GSL.

The primary issue facing the causeway is maintaining the roadway at high lake levels. The causeway was constructed at an elevation of 4208.75. The causeway is essentially a toll road, and \$7.00 per vehicle collected is by AISP. Of this, \$2.00 is returned to Davis County. Davis County utilizes these funds to maintain the causeway. There has also been some concern that the causeway restricts water flow from Farmington Bay to the south arm of the lake and inhibits brine exchange between the bay and the main

body of the lake. This results in freshening of Farmington Bay relative to the rest of the lake. This issue is discussed more completely in the “Water-Hydrology” section.

Southern Causeway (KUC/Private)

This unpaved causeway fill was constructed to provide a transportation route for material to complete I-80 reconstruction and to stabilize the island access road. The southern causeway provides administrative access to the south end of AISP. Occasionally, a few private landowners allow recreational activities.

At the present time, DPR does not have plans for major improvements of the existing corridor. The division would support minimal development for management access for emergency ingress and egress as well as access for non-motorized (hiking, biking) use. The division would support “low-impact” use of the corridor because of the various recreational and wildlife viewing opportunities in the area.

While the development of an access road is feasible in terms of engineering and function, development of an enhanced causeway for general access to Antelope Island would entail expenditures that are beyond the division’s current budgetary scope and priorities. Similarly, the current operations, maintenance and law enforcement resources necessary to effectively manage a developed causeway would be pressed beyond reasonable limits.

The division has used the corridor for emergency purposes such as fire control and search and rescue activities during

low lake level years. The division is also responsible for ensuring access to various structures owned by the FAA on the island. In lieu of any development activities, the division will continue to maintain an easement for access along the corridor.

Private Duck Clubs

(Private)

There are over 25 duck clubs with combined area over 50,000 acres around GSL. Duck club properties have been formed by private groups that acquired waterfowl habitat or lands that were developed into habitat. Many of these areas are intensively managed with extensive diking systems and water control structures that allow for optimum wetlands and foraging areas for birds. Many species of birds and other wildlife occupy these areas besides waterfowl. Some duck clubs have existed for over 100 years and they cumulatively have made a significant contribution to protecting and developing wetlands on and around the lake. Many duck clubs are adjacent to state and federal marshes and form a continuum of similar developments and habitat. There are 13 clubs on the south shore of GSL that total more than 16,791 acres of managed wetlands for waterfowl habitat (Dunstan and Martinson, 1995). All of the clubs are used for hunting by members only and use is regulated with bylaws. Members also utilize the areas for wildlife observation and nature study. Other opportunities include fishing, birdwatching, walking, bicycling, ice skating and photography. The primary goal of the clubs is to create high quality wetland habitat that is used by wildlife. These areas play a significant role for waterfowl during all parts of the year including hunting seasons. Hunter

activity on duck club property is relatively less than on most publicly owned and used marshes. Therefore these areas become a daytime sanctuary for waterfowl feeding and resting. Many clubs only allow hunting on selected days during the week. The net effect provides for a mosaic of habitats available to waterfowl with varying degrees of security over the course of the hunting season.

Bear River Migratory Bird Refuge (USFWS)

At 74,000 acres, BRMBR is considered one of the premier birding sites in the nation. Given the refuge's beautiful scenic background, isolated nature and sheer abundance of water birds, its complex of freshwater impoundments has long attracted birders from around the country and is one of the best places to experience the freshwater marshes of GSL. The refuge is recognized internationally and was integral to GSL's designation as a Western Hemispheric Shorebird Reserve. The refuge is also one of the finest waterfowl hunting areas in Utah. Currently the refuge is visited by 36,000 people annually, with 11,660 being waterfowl hunters. In addition, annual visitation includes 21,000 auto tour route visits, 1,155 fishermen and 2,185 others (Bull, 1998).

The refuge was damaged extensively during the 1980s flooding, and is being rebuilt ever since. Currently the refuge offers a 12-mile scenic drive that is popular for birding and bicycling, interpretive information, an air boat ramp that is open during hunting season and expanded access during hunting season. Fishing is allowed in the Bear River channel. USFWS is developing plans for a visitor center to be constructed near

Brigham City. This visitor center will dramatically expand interpretation opportunities of GSL's concentration of water birds. The visitor center is scheduled for completion by 2002. Currently the refuge offers educational tours by reservation. Management is working on a plan that will allow expanded fishing access, foot trails and a short canoe trip.

Given USFWS's dual mandate of protecting migrating birds and providing opportunities for hunting, the refuge follows a management mandate practiced throughout the agency. That is, 60 percent of the refuge is closed, 20 percent is open throughout the year and an additional 20 percent is opened only during hunting season.

Issues facing BRMBR include; safeguarding a dependable freshwater flow throughout the year, balancing hunting with watchable wildlife activities (consumptive and non-consumptive uses), protection from industrial encroachment along the southern boundary and utilizing sovereign lands for refuge purposes.

Layton Wetlands Preserve (TNC)

The Layton Wetlands Preserve protects approximately 3,500 acres of wetland and upland habitats. TNC's stewardship goals are based on improving the long-term viability of specific conservation targets identified within a conservation planning framework. Conservation targets include plants, animals, natural communities and ecological systems. The preserve is an excellent teaching environment and TNC facilitates research, educational and interpretative tours, and volunteer work projects.

Waterfowl hunting is allowed on a portion of the preserve for which DWR holds a hunting easement. Certain activities and areas of the preserve are restricted.

Critical issues facing the preserve include inappropriate infrastructure and development in the flood plain, fragmentation and loss of buffer habitat, water quality and water quantity reaching the preserve and disturbance of wildlife during production periods (Peterson, 2000).

Inland Sea Shorebird Reserve (KUC)

This 4,500 acre reserve was developed by KUC to mitigate for the tailings modernization and expansion project. The reserve features a relatively large contiguous acreage to provide nesting and resting habitat for migratory shorebirds and waterfowl. The reserve utilizes brackish water with mudflats and marshes to maximize invertebrate populations as food sources for birds.

Currently there is no public access to the reserve, though staff provides educational tours by appointment. Once mitigation has proven successful and COE accepts the mitigation results (scheduled for 2002), Kennecott could potentially open the reserve for greater public access. The most significant issues to the Inland Sea Shorebird Reserve would be trespass by hunters and encroachment from a potential southern road access to Antelope Island.

Gillmor Wildlife Sanctuary

(National Audubon Society)

This 1,425 acre sanctuary was donated to the National Audubon Society to preserve the natural ecosystem of GSL. The Audubon Society places value on all components, both biotic and abiotic, of the ecosystem. The sanctuary is comprised of a variety of habitats, from open water to playas and upland areas. It is situated on the former Jordan River delta, which is considered to be the best preserved river delta on GSL.

The Audubon Society is working with URMCC to develop a hydrological engineering plan to restore water to the natural waterways of the Jordan River Delta. The plan will encompass the South Shore Wetland Ecological Reserve, which is comprised of the Gillmor Wildlife Sanctuary and parcels of land owned by several other private land owners. Currently, public access is not available to the sanctuary as it is surrounded by private land. The National Audubon Society is working on a management plan that will address the public access issue. The most significant issues facing the Gillmor Wildlife Sanctuary are a potential southern road access to Antelope Island and trespass by hunters.

Promontory Point

(Private)

Promontory Point offers a striking vista and is the only location that could provide access to both the south and north arms of GSL. The site is currently accessible via a public road, but the surrounding lands are almost exclusively in private ownership. There has been interest in acquiring greater public access

to this interesting location. Multiple private land owners surrounding this site will make any expansion of public access difficult.

Recreational Activities on Great Salt Lake

Most of the recreation that occurs on GSL is dispersed in nature and visitor counts are not well quantified.

Navigation

The navigability of GSL, which is a key component of establishing state ownership under the Equal Footing Doctrine, was challenged by the Justice Department early in the contest over ownership. This challenge was based on the theory that the shore lands were remote, and in most places along the shore the water was so shallow that it would be impracticable to construct facilities for meaningful navigation on the lake. Utah was successful in proving that, both before and after statehood, the lake had been used for a variety of navigational purposes (UGS, 1980). Historical navigation includes watercraft use during construction of the Lucin Cutoff (the original northern railroad trestle and earth-fill), and tour boating during the heyday of resort development on GSL. Present navigation includes recreational sailboating, most of which occurs within six miles of the two marinas operated by DPR, a small tour boat which occasionally operates out of the Antelope Island Marina, a commercial tour boat that operates out of GSLM, commercial brine shrimp harvesting, salvage of the old railroad trestle, air boating, some power boating and law enforcement. Brine shrimp

sampling, water quality monitoring and lake bottom measurements collected by the state and extraction industries along with search and rescue activities require boat access.

Two box culverts in the northern railroad causeway between Little Mountain, Promontory Point and Lakeside initially allowed small watercraft to pass between the north and south arms of the lake through the causeway under certain lake levels. The culverts are no longer useful for this purpose. The breach near the west end of the causeway is not generally deep enough for navigation by deep bottomed craft. However, during 1997-98 numerous large brine shrimp harvesting boats navigated through the breach. Some crafts as long as 44 feet, 14 feet wide and less than 2.5 feet draft successfully navigated through this opening. As lake level changes, the height of the boat becomes the limiting factor in clearing the bridge.

In addition to the constraints associated with the causeway, navigation on the north arm is limited by the lack of launch and harbor facilities. Islands in the north arm provide critical bird nesting sites and are somewhat better protected by the causeway's restriction on navigation.. Development of facilities to accommodate north arm navigation would have to be planned carefully to minimize encroachment or visitation to the very sensitive nesting colonies.

Boating

There are two public boat ramps open year-around on the south arm; GSL Marina and Antelope Island. Both of these marinas offer safe mooring sites and are developed. These marinas are utilized almost exclusively by sailboats.

GSL Marina sponsors a large number of sailing races and festivals in conjunction with the Great Salt Lake Yacht Club. Motor boating is feasible but not popular. The corrosive nature of high salinity in the lake demands extra care and rinsing of engines and equipment. Navigation in the lake demands a high level of expertise; there is no fishing, and water skiing is not popular. These factors have prevented GSL from becoming very popular for motor boating. Approximately 300 sailboats are moored at the GSL Marina and an additional 25 at the Antelope Island Marina.

Farmington Bay WMA has the only public boat ramp in Farmington Bay. This ramp is suitable for air boats and small vessels only. The ramp is open from two weeks prior to hunting season through hunting season. Ogden Bay WMA, BRMBR, Bear River Bay and Willard Spur all have boat ramps suitable for small vessels and air boats. The north arm does not have a public boat ramp.

Non-Motorized Recreation

AISP has an extensive back country trail system (35 miles). Currently, well over 10,000 people a year utilize the Antelope Island back country trail system. Stansbury Island has a nine-mile trail. DWR WMAs have extensive dike systems open for cycling. BRMBR has a 12-mile graveled auto tour open for cycling. The Davis County Causeway is seven miles long with bike lanes in both directions.

Camping

The developed campgrounds of Antelope Island are used by approximately 25,000 campers per year. There are 26 individual

and five group camping sites at AISP. There is dispersed camping on BLM lands on Stansbury Island and in the area of Monument Point. Locomotive Springs WMA also allows camping.

Off-Highway Vehicles

Many of the public roads along the north and west sides of GSL in Box Elder County are open to OHV use. Sovereign lands surrounding GSL are not open to recreational use by OHVs. Through participation on the West Box Elder Access Management Team, DFFSL is anticipating the opening of limited sovereign lands to OHV use in the vicinity of Kelton.

Birdwatching

GSL is one the most renowned birding areas in the U.S. Avifauna associated with GSL and its periphery are abundant and diverse including migratory waterfowl, shore and wading birds, and marsh-associated songbirds. Over 250 different species have been identified. Several million individual birds use GSL throughout spring, summer and fall migration. GSL also has one of the largest concentrations of bald eagles in the 48 contiguous states during winter (DWR and Great Salt Lake Site Assessment Team, 1997). Nearly all the recreation areas identified above have outstanding opportunities for birding.

Hunting

GSL is the most important waterfowl hunting area in Utah. It is estimated that 63 percent of Utah's total waterfowl hunting occurs at GSL, with 80-85 percent of all waterfowl harvested in Utah coming from the GSL area. The

state WMAs and parts of the BRMBR were purchased and are maintained by revenues and taxes from hunting. The state WMAs, BRMBR, sovereign lands and many private lands are open for hunting. The estimated number of waterfowl hunters utilizing GSL and environs in 1996 was 22,700 and 1998 was 22,593. The estimated number of hunter days on state-managed areas around the lake in 1996 was 53,700 and 1998 was 43,119. These numbers are impacted by lake level fluctuations, bag limits and hunting regulations (Aldrich, 1998 and 2000).

Sightseeing (auto tours)

AISP and the Davis County Causeway combined offer a 42-mile round trip auto tour. BRMBR has a 12-mile auto tour. The Monument Point area and surrounding lands have many miles of remote dirt roads for auto touring. The lack of a public thoroughfare between Lakeside and Hogup Ridge on the lake's western shore precludes circumnavigation of the lake by automobile.

The impacts to the existing transportation facilities at GSL are discussed in other sections of this statement, including "Water-Chemistry." Access to and on sovereign lands is discussed in the sections which addresses the uses for which access is provided.

Interpretive and Educational Opportunities at Great Salt Lake

Interpretive and educational programs have been significantly enhanced in recent years. AISP has developed a

5,200 sq. ft. visitor center on Lady Finger Point to provide interpretative and educational opportunities. The Fielding Garr Ranch is open and provides self-guided historical interpretive opportunities. Picnic and parking facilities are available. The park has wayside exhibits, nature trails, educational tours, and interpretive talks. The Salt Lake Convention and Visitors Bureau has opened a visitor center with information about GSL, Salt Lake City, and the rest of the state. The visitor center is located at the 7200 West exit on I-80.

BRMBR breaks ground on a new visitor center in 2001. Completion is scheduled for 2002. Farmington Bay WMA is initiating an effort to significantly expand interpretive development and visitor services for their north end.

URMCC completed a *Needs Assessment and Conceptual Plan for Interpretive Recreation and Education for the Greater Great Salt Lake Wetlands Ecosystem* (1995). One of the commission's key objectives of the plan is to: "Create an umbrella concept under which all local projects play a role; the entire scheme should be a nonrepetitive delivery of messages, each site carrying appropriate messages for that site and complementing efforts at other sites, thereby encouraging people to visit another location." To begin implementing this objective, the URMCC, in cooperation with DWR, is developing a "Wetlands Ecosystem Education Plan," which should be completed in 2000. A master plan should also be completed by 2000. The plan will specify a comprehensive educational program and, when implemented, will enhance diverse audiences' understanding of the functions, values

and importance of the greater GSL ecosystem wetlands, threats to these wetlands, and means to protect and restore them.

Layton Wetlands Preserve is working on a plan to implement an interpretive program at the preserve. Most of the GSL attractions offer educational tours by reservation or appointment. Friends of Great Salt Lake has an hour long interpretive slide show, called *The Lake Effect, Living Together Along the Shores of Something Great*, and outreach programs designed to educate people about lake resources and issues.

The MLP for GSL specifies DFFSL will work with mineral lessees to provide interpretive displays of mineral development sites with particular emphasis on contributions to Utah's economy and recognizing effective mitigation efforts on the lake.

Cultural Resources on Great Salt Lake

Human activity in the region has been drawn to the lake shore for thousands of years. Prehistoric archaeological sites have been documented in and adjacent to lake wetlands. Several of the oldest documented cultural sites in the mainland U.S., Danger and Hogup Caves, are located in the lake environment.

Jim Bridger is credited with the Anglo discovery of the lake. The lake was the focus of early mountain man expeditions, government expeditions and wagon trains which crossed close to the shore, sometimes with ill-fated results. With the arrival of the Mormon pioneers, resorts

and other economic enterprises sprang up along the lake shore.

Cultural resources of GSL have been the subject of much research, primarily by agencies and institutions external to DNR. State agencies are required to consult with the Division of State History prior to the initiation of any project which may disturb cultural resources.

Prehistoric Resources

Use of GSL wetlands started with Paleoindian cultures as long as 10,000 years ago. Cultures primarily utilized areas immediately adjacent to wetlands. Paleoindian and later Archaic cultures utilized areas adjacent to wetlands for thousands of years. The Fremont Culture which flourished in the GSL valley from 500-2,000 years ago built permanent villages along the wetland margins. The Fremont, Paleoindian and Archaic groups hunted and gathered in the wetland ecosystem. The Fremont added farming corn, beans and squash to their subsistence base. Fremont remains are found connected to nearly every wetland around the lake. Subsequent cultures, the late prehistoric and historical tribes, also made extensive use of GSL wetlands. Today, there are nearly 400,000 acres of wetlands on GSL. Several hundred Native American archaeological sites have been identified in GSL wetlands.

Well known sites such as Danger Cave and Hogue Cave are situated near wetlands of former Lake Bonneville. Cultural deposits along GSL have supplied valuable information about prehistoric cultures. Currently, most protection of cultural resources is done through state and federal agencies, to ensure development complies with state

and federal law. Cultural deposits in GSL wetlands can be difficult to locate as they are usually buried under the surface or obscured by vegetation. Often erosional events, such as wave action associated with high lake levels, expose previously buried archaeological sites and, in the past, Native American human burials have been exposed..

The most immediate threat to prehistoric cultural resources is construction activity adjacent to the east side of the lake, such as the proposed Legacy Parkway. The Division of State History is confident that when surveying and construction is undertaken in these areas, numerous Fremont camp sites and human burials will be discovered in affected wetlands. This will necessitate archaeological surveys and compliance with the Native American Graves Protection and Repatriation Act (NAGPRA). If these human remains are treated in the same manner as those which were exposed after the 1980s floods, they will be deposited in the Native American Remains vault at This Is The Place State Park.

Unique prehistoric and historical cultural resources of significance have been identified on Fremont Island. Prehistoric sites including rock art have been discovered on Stansbury Island and elsewhere around GSL. Antelope Island contains prehistoric sites, and active cultural surveying will continue. Cultural resource management on state lands along the east shore is conducted on a case-by-case basis as projects are undertaken or discoveries made. It has been suggested by some archeologists that the state conduct regular monitoring of sensitive areas.